RECOMMENDED STANDARD PRACTICE ON MEDICAL SUPERVISION IN DETROIT PLANTS[1]

The committee presents its report in two parts: first, the results of a personal investigation of Detroit plants; and second, some practical suggestions for building up medical supervision in these plants to a certain standard of efficiency. Both the investigation and constructive policy are divided into three parts: physical examination, sanitation, and health and accident supervision.

From the investigation of these plants we find the following:

The committee personally investigated over thirty plants, ranging from 280 to 42,000 employes. But although various phases of medical supervision are being launched as separate items, there are very few firms that approach what we would call an average standard of efficiency. For this reason our analysis must be more or less vague. There being no accepted standard here in Detroit and the work being frequently under the direction of untrained people, the results of statements made by some firms would not justify our placing the same value on them. But the hopeful part of the situation rests on the fact that except for a few who admittedly are so engrossed in their overwhelming prosperity of production as to be indifferent to the individual care of the operatives, most of the companies are most eager to initiate some adequate system of medical supervision, or bring what they have up to a recognized standard. It is with the hope of helping these that we submit the following.

There are four companies with physical examination on employment and one company with reëxaminations which occur and reöccur whenever the results of the first one seem to warrant them. In ten companies rejections of applications are made, mostly for

[1] The Welfare Managers group of the Detroit Executives' Club has recommended as standard practice the following report of a committee of physicians and welfare workers.

Acting with the coöperation of Helen Bacon, secretary of the group, who was formerly employment manager of women of the Western Electric Company of Chicago, this committee made personal studies of the medical departments of over thirty plants before drawing upon their own experience in industry to write the report. Dr. T. H. Mullen, of the C. R. Wilson Body Company, chairman, presented the recommendations of the committee at a meeting of the group on February 7, 1917. Signing them with him were Dr. E. H. Hanna, of the Cadillac Motor Car Company, a member of the National Conference Board of Physicians in Industrial Practice; Dr. W. A. Wilson, president of the Michigan Child Welfare Congress, and P. D. Hall, of the employment department of the Solvay Process Company.

Because of the fact that adequate medical supervision is far from common in industry and in no wise standardized, this report is interesting as an agreement upon principles by authorities in a number of plants.

venereal or skin diseases. Five companies give an age limit, the lowest forty, the highest fifty. One company rejects for any defect, venereal disease, tuberculosis, or over forty years, but allows drinking men. Three companies refuse drinkers. Eleven companies give some test for eye and ear and a few of these are really complete. Fourteen companies make some attempt to fit the man to the job for which he seems physically capable, yet without a physical examination, this is often impossible. One company has a follow-up system to fit or refit the man to the job and some file all applications and follow them up when men are needed.

SANITATION

Fourteen companies have some sort of committee on sanitation, and twenty-one have some sort of supervision of it. Only four companies have what we would consider very good toilets and of these four, only one company has an adequate number. Many have fair ones as far as type goes, but they are entirely inadequate to the number using them.

The same is true of drinking fountains. Some companies have them, and of a good type, but mostly so few in numbers as to make them almost ineffective. Only two approached the standard.

About half have paper towels, two have individual cloth ones, a few have roller towels and the rest none.

The floors are in better condition, some of them being very good and kept in good condition. In one plant where the floors are cement, rubber mats are supplied the men who stand; and from the men's say-so they are very satisfactory.

As to ventilation and lighting supervision, eight are considered good, some fair and the rest poor. Where new buildings are being constructed, this phase is being more carefully considered. One company has meetings of foremen to suggest lighting and ventilation improvements.

It was interesting to find two companies putting in laundries, and in one case the company will also wash the men's overalls.

HEALTH AND ACCIDENT SUPERVISION

On the whole the wash rooms are in only fair condition. In many cases no separate rooms are set apart, and in two cases the men and women wash together. One company has a fine basin and towel rack with individual towels for every ten; and they are put through in squads with plenty of time.

Locker rooms follow in most cases the condition of the wash rooms. Although some have steel lockers instead of the unsanitary wooden ones, only a very few begin to approach the number of employes. One company has a fine building under construction with full drying and ventilation system included.

The restaurants can be said to approach more of a standard, possibly because they must to a certain extent compete with those outside the plants. Some have tables only for the office force; some have separate tables in the same room for office and shop people; and a few have separate rooms or even buildings. One company has its restaurant divided into a serve-self and service sections, allowing office and shop men to use either side. Although the cost of the meal is increased slightly when given with service, many of the shop people prefer it to the serve-self side. Several of these restaurants are operated by outside caterers. Those operated by the plants themselves average a loss of 6 per cent. One company sells tickets on nearby restaurants at less than a single meal costs.

Though several firms maintain baseball, bowling or other athletic teams, only a few have an organized recreation unit; and in almost no instances are even these facilities utilized by the non-English speaking workmen. Yet these employes comprise the largest part of our working force, and have the least chance of securing such activities outside the plant.

Seven companies maintain a Mutual Benefit Society and two companies are considering establishing one.

Ten companies carry on some home investigation but only three of these attempt any educational work as a result of the investigations. In eight cases some visiting nurse work is done, but in most cases inadequate to the whole situation. Two companies are about to put such a system into operation.

With the exception of a very few, the hospital and first-aid rooms are pitifully inadequate or totally missing. Seven companies have paid physicians spending from one hour per day to their entire time at the plant. Others have doctors on call. Three companies have plant hospitals for the men with first-aid attendants. In these plants, drugs are furnished the men for minor ailments other than accidents. Here also advice is given as to physical condition whenever an employe wishes it. Several companies have outside medical contracts with hospital arrangements. Two companies have partial dispensaries. Two have work in first aid and minor treatments at the hands of an insurance company. And below these, medical supervision in some plants drops to the use of the clerical office or the lavatories. Two companies paying bonuses make report of minor injuries at once a condition of receipt of bonus as well as compensation. One company has a small laboratory and a part-time doctor studying occupational diseases. Ten companies put some attention on the care of occupational diseases; but possibly due to the fact that in many cases it is difficult to determine, the progress is not great. However, it is a great deal that this number of employers want to accept the responsibility.

To begin our constructive policy we advocate a physical examination for each new employe—not so much for the sake of rejec-

tion as to determine whether the man is physically fit for the job for which he is hired. If not, the doctor should indicate what jobs he might work at, without increasing any deficiency he may have. If a man's condition would allow him to work efficiently at any one job in a plant, we would not bar him from employment because he might not be fit for other jobs in the same plant. It is a fact that only 15 per cent of accidents and deaths are due to unsafe machines and unsafe places, the largest proportion being due to the unsafe man.

The arguments in favor of physical examination from the employer's standpoint are: (a) protection; (b) production; (c) coöperation.

It is evident why it is a protection to the employer to have the employe examined. Our industrial records will show any number of cases where the employe has attempted by fraudulent means to obtain large sums of money from his employer. For instance, a man injures his eye; examination shows him to be hopelessly blind. The employe says the accident made him blind when in reality he has been blind for months or years. A workman comes into the doctor's office with a swelling in his groin. It is a hernia. The workman says he got it lifting a box of material. We do not believe it, but how can we prove it if the man has not been examined? There are any number of defects which might similarly be uncovered had the man undergone a physical examination when hired.

The physically fit are in themselves much more able to increase the output of a factory or department, but besides that if we know those who are not physically fit, we may be able to place each one at a particular kind of work at which in spite of his defects he can produce as much as his physically fit fellow workman.

That spirit of coöperation is bound to occur where the workman is happy in the thought that in spite of his physical defect he can earn a good fat pay envelope and not accept it in a spirit of charity. Consequently he boosts his work, he boosts his employer and makes himself valuable in many ways.

On the other hand, the arguments from the employes' standpoint are that the employe is infinitely helped by being placed at work which he is physically able to do, and not having his life endangered, if he is suffering with myocarditis, by giving him a position where he is called upon to climb stairs, run lathes, or drill presses. The man with the poor eyesight is not put to work on fine grinding, tool making, etc. On the contrary he is set at work at which he can actually earn as much as his more fortunate brothers. And the fraudulent workman is eliminated from the ranks of the honest workman.

The advantage to a man in finding out his own physical deficiencies—maybe just in their beginning—is invaluable. But in this connection be careful that you make the man understand.

Especially if he is non-English speaking or English speaking but ignorant of the value of prophylactic or medical care, it will be necessary to spend more or less time in making him understand; but it will bring returns that will more than pay for time thus spent. Also, when both employer and employe know his physical status, a man is not going to claim benefits later for a deficiency he acquired previous to his present employment.

The subject of hernia is today causing considerable discussion, especially from a medico-legal standpoint, the standpoint of physical fitness, and finally from the standpoint of compensation.

Hernia is the protrusion of an organ through an abnormal opening of a containing cavity. Personally I lean to the opinion that true hernia (we are now speaking of abdominal and inguinal hernia in particular) is an inherited condition.

How often have we operated so-called recent traumatic hernia and found the sac thick and tough, showing its presence there for years, probably since birth. It is a fact that the courts hold in favor of the patient when the legal aspect is presented. A patient presents himself with an inguinal hernia, claiming it to have been caused by lifting this or that, or stepping a comparatively few inches downward while in your employ. The courts hold, as do most industrial boards, that the man is entitled to the benefits of compensation, when an operation upon the same man shows the hernia sac of the age of a lifetime.

Without fear of proof to the contrary, no man who ever lived, who was born and had reached the age of five to fifteen minutes without the presence of an abnormal opening in his abdominal wall, ever sustained a hernia through any force suddenly applied, no matter how great, unless that force was accompanied by a penetrating wound where the hernia appears.

A sac may exist for years and yet remain empty. When the bowel or omentum enters it from some strain or effort, the parts were long prepared to receive the extruding mass. This extrusion may occur gradually or suddenly. If the latter, the sufferer believes his hernia was formed then and there. But as a matter of fact, the extrusion of bowel or omentum and its entrance into the sac are but the last of a long series of antecedent and preparatory changes. The hernia appears and usually does so during effort. If extraordinary muscular effort is a cause and a sole cause of hernia, why are not all or nearly all of those men engaged in lifting occupations victims of the disease?

Heretofore all applicants who had only half vision were rejected. It is very important to examine both eyes. When an employe who has but one eye suffers the loss of sight of the sound eye, the employer is held under the law for the loss of both eyes. If the eyes appear subnormal in any way, special examination should be given

by an oculist. A general examination of the condition of the teeth should be followed, when necessary, by a detailed examination by a dentist. Eventually it may be worth while to have as part-time officers of the staff an oculist and a dentist.

In this connection we feel that it would be of mutual advantage for the doctor to advise regarding treatment and be allowed to receive the employe as a private case should the man desire it. In this way the doctor will become better acquainted with the condition of the employes and will not become stale as is the fear of the industrial surgeon in handling only one type of work.

The committee has drafted a standard examination record form like the example given.

PHYSICAL EXAMINATION BLANK

.....Company

Date Hired..... Date.....
Name.....Age.....No.....
Nationalty.....S.M.W. Trade.....
General Appearance.....Children.....
Have you ever had an operation?.....
What serious accidents or diseases have you had?.....
.....
R R Do you wear glasses?.....
Vision Hearing Are you ruptured?.....
L L
Signed.....

Deformities.....Ht.....In.....Wt.....Lbs.....
Extremities, varicose veins, flat foot, etc.....
.....Blood Pressure.....Urine S. G.....
Head, including nose, mouth, teeth, throat and neck.....
.....
.....
Heart, Lungs, Liver. Inguinal Region.....
.....
Is special examination recommended?.....If so, for what?.....
Remarks .....
.....
.....

This man is physically fit for { Any / Moderate / Only Light } Work
(Signed).....

If this record were used in all Detroit plants we would eventually have some data from which we could build our average manufacturing man, his possibilities and value.

In order to safeguard the interests of the other employes, we consider the following as legitimate causes for rejection: venereal diseases, tuberculosis, skin diseases of a contagious nature, eye diseases of a contagious nature, epilepsy if determinable, and any physical unfitness of non-contagious nature which would incapacitate

the man for the work for which he is hired. A deformity not interfering with effcient production would not be a cause for rejection.

Reëxamination will depend upon the condition at the time of employment, any defects being followed up as often as seem best to the examiner. The responsibility for seeing that stipulated reexaminations occur, and for sending for reëxamination any other case where a man seems below par, should be definitely placed on each foreman. Then, with consultations between him and the physician on his regular rounds, he should be able to keep a fair gauge on his men. And we even suggest a medical record book for each foreman so that during the shifting and changing, the medical supervision of the men will not suffer. Also, we would demand that all injuries, however slight, be sent to the first-aid room for treatment. This avoids very costly cases of infection. The foreman should be held responsible.

Where firms have rigid pension systems, age limits may seem necessary to safeguard the funds; but otherwise, we do not believe that except as it affects a man's physical fitness for a job any arbitrary age limit should be placed upon an applicant.

If an employe is affected by a disease traceable in its causes to his work or the conditions in a plant, his case should be given special care and he should receive compensation as in the case of accidents.

SANITARY ARRANGEMENTS

The sanitation of a plant should be under the supervision of a committee composed of the safety engineer, plant physician, nurse and welfare worker. The cause of each accident should be investigated by the safety engineer with a view to providing against a recurrence in the future. Frequent cases of sickness from any one section should be traced for a possible cause in the shops themselves. A stated round by the doctor would bring forth cases needing attention and each foreman could assist in making suggestions for better sanitation.

The material available on the subject of factory equipment in washrooms, locker rooms, toilets, drinking fountains, etc., is very limited, that is, such material as we can use for our report. No one seems to have figured these equipments out as to requirements per hundred men except in some very local situations, not at all fitting varied factory needs.

The following suggestions form what we might call the well-equipped plant, as seen by two sanitary engineers, a doctor, two safety engineers, four welfare men, and the suggestions of the manufacturers of sanitary plumbing, and the equipment of recognized leaders in factory completeness.[2]

[2] Where cuspidors are needed they should be placed on paper mats twenty inches in diameter and changed daily. Paper lined cuspidors are recommended.

	Lavatories	Toilets	Drinking Fountains	Lockers
Type.....	Individual	All Porcelain. No wood	Bubble type, arranged so lips do not touch metal	Perforated metal, slanting top to prevent accumulation of refuse
Located....	In central building near lockers	Substations near workers	Where convenient to workers	In central building
Number...	1 for 15 men	1 to 20 men	1 to 30 men	1 per man. If possible one compartment for work and one for shop clothes
Accessories.	Hot and cold water, liquid soap, paper towels	Automatic flush		Locked. Forced hot air ventilation to dry wet garments
Plumbing..	Open type, plain			
Special Features	Porcelain	Must have a forced air ventilation	In clean, light places	It is advisable to arrange locker so that men coming off work at same time have every second or third locker to prevent crowding
Note	Average time per man at wash basin 2½ minutes	Compartments should not have doors, as easier to keep clean		If lockers are near washbasins, a larger number can use both without waiting

The objection to paper towels, "that we do not get our hands dry enough to prevent chapping" can be done away with by a well ventilated, warm dressing room, where the hands will dry while dressing.

Where there are corners into which waste papers and refuse are thrown this can be largely eliminated by painting these corners white and lighting them well. One does not throw waste into clean corners.

Tile floors should be laid in all washrooms, etc., where possible, otherwise cement well drained. Oily floors should be scraped and swept daily. Where cement floors are used, rubber pads for the men to stand on will help in increasing comfort and efficiency. All

scrap metal should be kept clear of the workers. Many injuries have resulted from this in Detroit plants lately.

Since there is a special committee of the Industrial Welfare Managers' Association on sanitation, we will leave a detailed report on these phases to that committee.

A report on suggestions for forming a mutual aid association has just been completed by that committee of this association and will be mailed this week to each member of the association. About one-third of the poor commission cases of Detroit deal with industrial workers or their families and yet in most of these cases the industry is not responsible. For instance the cases can be roughly divided into: (1) accidents or sickness outside the plant; (2) tuberculosis; (3) desertion; and (4) when compensation has been exhausted. Now help for the first class, at least, would be obtainable from a mutual aid association, and would serve to bring the man back to the factory at the end of his disability instead of his leaving altogether and thus necessitating the breaking in of a new man. Group insurance would also help in this way.

We include good lunch room and recreation facilities among our prophylactic treatment but are leaving to the special committees on these phases, detailed reports of the work.

The following equipment we suggest to maintain an effective first-aid room or plant hospital.

This will depend necessarily on the number of men employed. In one Detroit plant of 8,000 employes, three physicians are kept constantly busy either on inside or outside work. Where a doctor is going to carry on successfully other phases of medical supervision besides emergency accident work, we think his supervision should not range higher than from 2,000 to 3,000 employes.

As to adequate hospital rooms, we consider a unit of 1,400 to 2,000 employes would require three rooms—a reception room, an examining room, a surgery or dressing room.

The furniture needed in a reception room is enough chairs so that patients will not have to stand, and a stretcher. The examining room should have a rest cot, scales and other incidental equipment with two or more booths to facilitate examinations. The surgery room needs an operating table, an instrument case with necessary first-aid instruments, drugs and dressings, one or more pedestal wash basins, and one waste can.

For plants of less size, at least one room, set aside for this purpose only, is absolutely necessary to carry on medical treatment successfully.

To show what nursing service the employes of Detroit manufacturing plants are getting—and without knowing it—we submit the following data.

Out of a total of 378 patients cared for during the month of

December, 1916, by the Visiting Nurse Association, there were 222 cases where the wage-earner was employed by a manufacturing firm.

A survey has just been completed by the Detroit Home Nursing Association of more than 10,000 homes of moderate means, and records were made of 2,000 cases of childbirth, 675 of which were cases where the wage-earner was employed by a manufacturing firm. In 653 cases of the 675 the husband acted as nurse at night; in 158 cases he stayed at home from work from one to four days; in thirty-one cases he stayed at home one week and in four cases two weeks.

The incomes of those 2,000 cases ranged as follows: 48 families received less than $60.00 per month; 406 families received $60.00 or less per month; 796 families received $60.00 to $100.00 per month; 642 families received $100.00 to $150.00 per month; and less than a dozen have incomes over $150.00 per month. The financial condition of the majority of these families prevents them from securing dispensary treatment, yet is not sufficient to leave much margin for medical care.

Of course this is only scattered service and covers but a small part of what a nurse could accomplish if she were wholly or in part employed by you. An industrial nurse and first-aid man should have the following duties:

1. First-aid and hospital work.
2. Rounds in plant for observation of employes and inspection of shops.
3. Health and hygiene classes or talks to employes.
4. Home visits for nursing sick employes.

There are two organizations which can be made use of if you have no factory nurse or if you want to demonstrate the actual use of such a worker. The Visiting Nurse Association will give trained nursing service at the rate of fifty cents a visit, or will take over the entire nursing responsibility of a plant at the salary of one nurse. The Detroit Home Nursing Association will give practical nursing service at $10.00 to $14.00 per week. This service is especially desirable where the woman is incapacitated to the extent of not being able to do her housework, care for the children and get her husband's meals. The service of such a woman would be cheaper than that of the husband if it would otherwise be necessary for him to remain at home.

In this connection let me also state that the Visiting Housekeepers Association will be glad to send workers into any homes to teach the women the economical planning of meals and family expenses. Several firms are now using this as a free agency and one company is paying the salary of a visiting housekeeper so as to have her entire services available for the employes of their plant.

Since you may not feel that your force is large enough to warrant (at least at first) a full-time physician and nurse, we suggest a grouping of small plants so that with a relatively small expense adequate skilled service can be secured. Later on as individual plants become more systematized in this work, it may be desirable to develop a central bureau for examination and employment. In this way much work could be accomplished regarding the turnover of labor and temporary transfers, and a standard of medical supervision developed which would greatly increase individual plant efficiency.